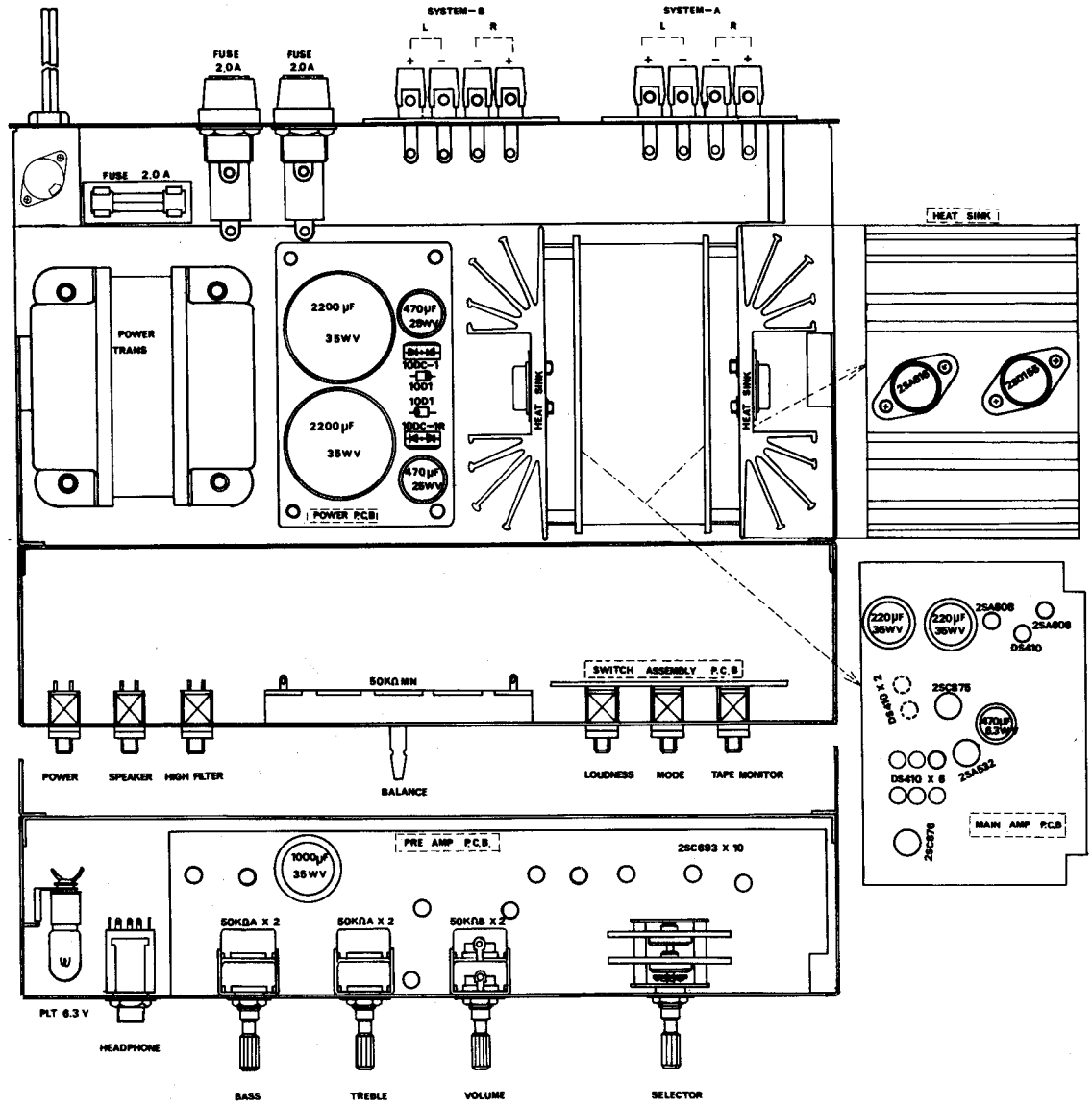
SANYO

# SANYO
# STEREO AMPLIFIER
# DCA 1400
# SERVICE MANUAL

## SPECIFICATIONS

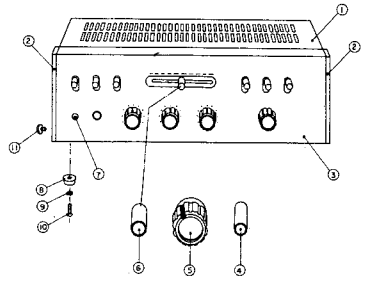
| | | | | | |
|---|---|---|---|---|---|
| Transistors | 2SA608 x 4 | 2SA532 x 2 | Output impedance | 4 ~ 16 ohm (Recommended 8 ohm) | |
| | 2SA616 x 2 | 2SC875 x 2 | Tone controls | BASS | 100 Hz ± 12 dB |
| | 2SC876 x 2 | 2SC693 x 10 | | TREBLE | 10 KHz ± 12 dB |
| | 2SD155 x 2 | | Loudness control | 100 Hz + 10 dB | |
| Diodes | DS-410 x 18 | 10D1 x 2 | | 10 KHz + 3 dB | |
| | 10DC1 x 1 | 10D1R x 1 | High filter | 5 KHz | –6dB/oct |
| Frequency response | 15 ~ 70,000 Hz (–3dB AUX) | | Phono equalization | RIAA curve | |
| Power band width | 15 ~ 70,000 Hz (0.8% distortion AUX) | | Power source | AC 120, 200, 220, 240V | |
| Output power | 20W + 20W (C.P.O. 0.8%) | | Power consumption | 50W (120V 60 Hz) | |
| | 28W + 28W (M.P.O. 0.8%) | | Dimensions | 11-5/8"(W) x 10"(D) x 4-1/4"(H) | |
| Input terminals | PHONO 2.5mV/20W | 50K ohm | Weight | 10-1/2 lbs. | |
| | AUX 100mV/20W | 100K ohm | | | |
| | TUNER 100mV/20W | 100K ohm | | | |
| | DIN | 100K ohm | | | |

## PARTS LOCATION



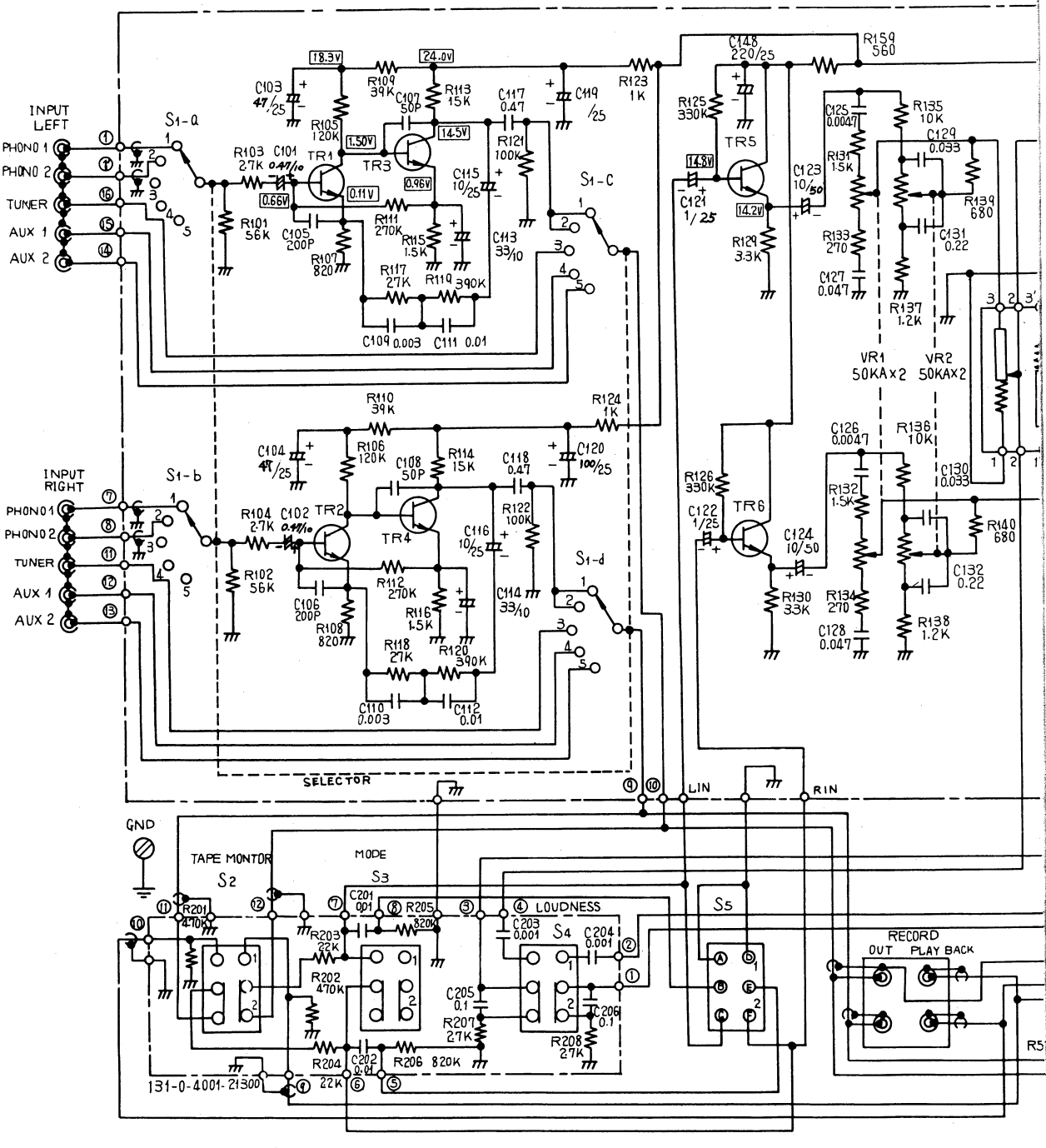
## PARTS LIST

| Ref. No. | Part No. | Description | Q'ty |
|---|---|---|---|
| CABINET & CHASSIS | | | |
| | 131 0 1016 13003 | Panel assy., Decorate | 1 |
| 2 | 131 2 1311 29700 | Sash | 2 |
| 3 | 131 2 1203 20306 | Panel, Control | 1 |
| 7 | 131 2 1504 10401 | Plate, Sign lamp | 1 |
| | 131 2 6113 11100 | Shelter | 1 |
| | 131 2 6113 10100 | Shelter | 1 |
| | | Nut M3 | 2 |
| | | Flat head screw 3x8 | 2 |
| | | Pan head tapping screw 3x8 | 2 |
| | 131 2 6113 11200 | Shelter | 6 |
| 4 | 131 2 1601 18200 | Knob, Lever switch | 6 |
| 5 | 131 2 1601 18300 | Knob, Rotary | 4 |
| 6 | 131 0 1001 19000 | Knob assy., Balance | 1 |
| 1 | 131 2 1410 10001 | Cover | 1 |
| 11 | | Binding head screw 3x6 | 6 |
| | 131 2 3301 15202 | Chassis | 1 |
| | 131 2 2903 11800 | Rubber pad | 4 |
| | 131 2 3310 10500 | Metal support | 2 |
| | | Pan head tapping screw 3x8 | 4 |
| | 131 2 6111 10300 | Bushing | 1 |
| | 131 0 3016 10500 | Cramp assy., Wire | 4 |
| | 131 2 3306 13105 | Panel, Rear | 1 |
| | | Pan head tapping screw 3x6 | 5 |
| | 131 2 6111 11300 | Bushing | 1 |
| | 131 2 3305 11702 | Panel front | 1 |
| | | Pan head tapping screw 3x8 | 4 |
| | 131 2 5206 11100 | Moldplane | 1 |
| | 131 2 1105 10701 | Plate, Bottom | 1 |
| 8 | 131 2 1804 10500 | Leg, Rubber | 4 |
| 10 | | Pan head tapping screw 3.5x8 | 4 |
| 9 | | Washer 3.5$\phi$x7$\phi$x1t | 4 |
| | 131 2 6111 10000 | Bushing | 2 |
| | | Pan head tapping screw 3x6 | 6 |
| | 131 2 6301 10400 | Cover, Pilot | 1 |
| | 131 2 4208 13500 | Spacer | 4 |
| | 131 2 6107 12100 | Plate, Sever | 1 |
| | 131 2 3101 13600 | Metal mount, power select socket | 1 |
| | 131 2 6107 12800 | Plate sever | 1 |
| | 131 2 4208 14300 | Spacer | 1 |
| | 4 2519 21602 | Power trans | 1 |
| | 4 6129 20010 | Pilot lamp, 6.3V 0.2A | 1 |
| | 131 0 4002 11000 | Socket, Pilot | 1 |
| | 4 2359 21080 | Jack, Headphone | 1 |
| | 4 2359 21230 | Socket, Phono 4P | 2 |
| | 4 2359 21240 | Socket, Phono 10P | 1 |
| | 4 2369 20520 | Plug, Connector | 2 |
| | 4 2359 20190 | Socket, DIN | 1 |
| | 4 2359 20200 | Fuse holder | 2 |
| | 4 2349 20030 | Fuse, 2A | 2 |
| | 4 2349 20030 | Fuse, 2A (120V) | 1 |
| | 4 2349 20200 | Fuse, 1A (200 ~ 240V) or | (1) |
| | 4 2359 21062 | Fuse holder | 1 |
| | 4 2359 20940 | Socket, AC | 2 |

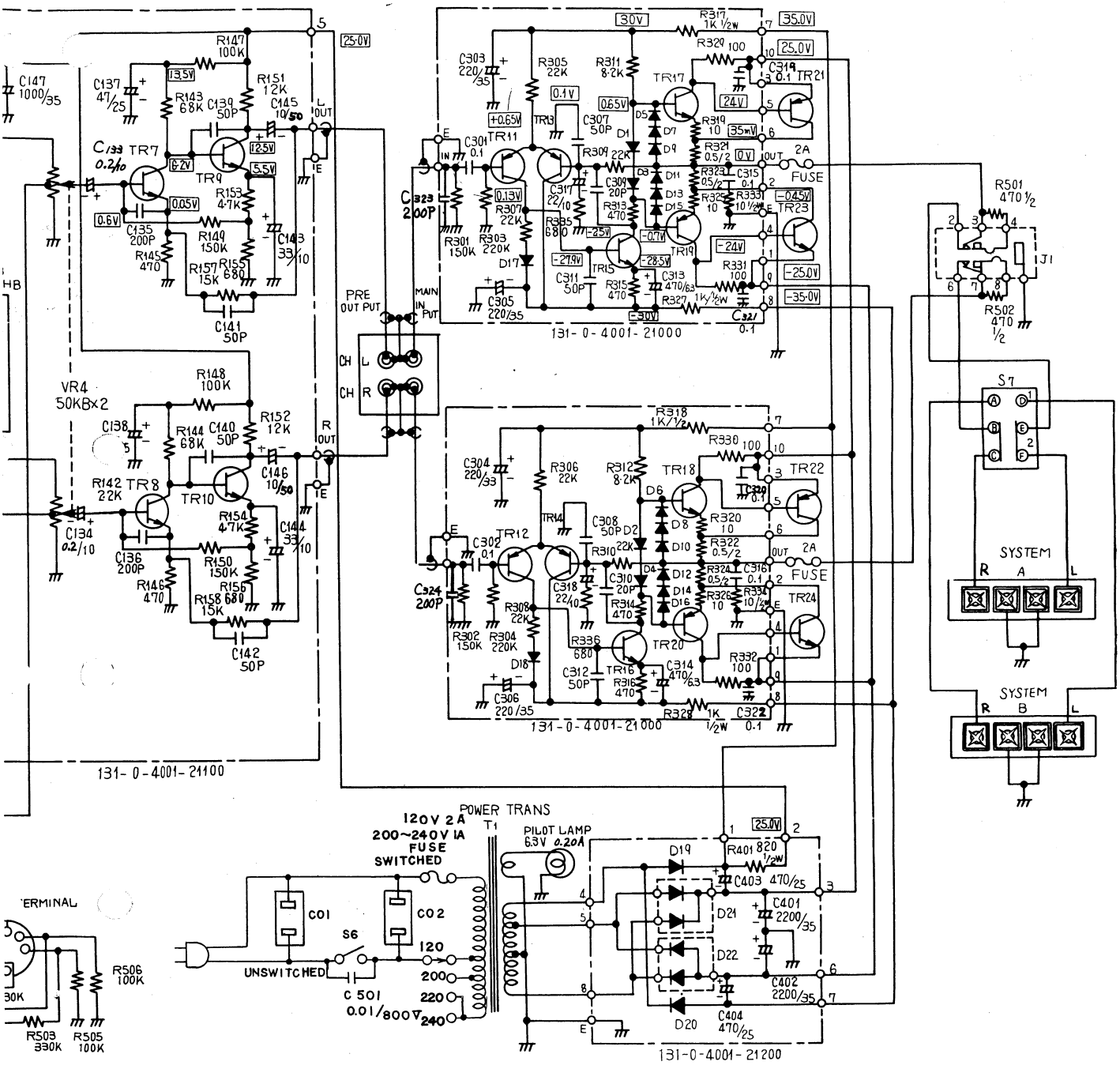


| Ref. No. or Part No. | Description | Q'ty |
|---|---|---|
| CHASSIS & CHASSIS | | |
| 4 2319 22260 | Switch, Lever 3P | 1 |
| 4 2319 22160 | Switch, Lever 6P | 2 |
| 4 2379 20900 | Terminal, 4P | 2 |
| 4 2439 20390 | Power cord | 1 |
| 4 2229 22180 | Slide VR MN-50K ohm | 1 |
| 4 2369 20561 | Plug, Connector | 6 |
| 4 2369 20550 | Power selector (Plug) | 1 |
| 4 2359 21220 | Power selector (Socket) | 1 |
| | **CAPACITORS** | |
| C501 | Oil 0.01$\mu$F ±20% 800WV | 1 |
| | **RESISTORS** | |
| R501,502 | Carbon P-type 470$\Omega$ ±10% 1/2W | 2 |
| R505,506 | Carbon P-type 100K$\Omega$ ±10% 1/4W | 2 |
| R503,504 | Carbon P-type 330K$\Omega$ ±10% 1/4W | 2 |
| PRE AMP. P.C.B. ASSEMBLY | | |
| 131 0 4001 21100 | Printed circuit assy | 1 |
| 4 2229 22160 | VR-B-50K ohm X 2 | 1 |
| 4 2229 22170 | VR A-50K ohm X 2 | 2 |
| 4 2319 22180 | Switch, Rotary | 1 |
| TR1 ~ TR10 | Transistor 2SC695 | 10 |
| | **RESISTORS** | |
| R133,134 | Carbon P-type 270 ohm ±10% 1/4W | 2 |
| R145,146 | Carbon P-type 470 ohm ±10% 1/4W | 2 |
| R139,140,155,156 | Carbon P-type 680 ohm ±10% 1/4W | 4 |
| R107,108 | Carbon P-type 820 ohm ±10% 1/4W | 2 |
| R123,124 | Carbon P-type 1K ohm ±10% 1/4W | 2 |
| R137,138 | Carbon P-type 1.2K ohm ±10% 1/4W | 2 |
| R115,116,131,132 | Carbon P-type 1.5K ohm ±10% 1/4W | 4 |
| R103,104 | Carbon P-type 2.7K ohm ±10% 1/4W | 2 |
| R153,154 | Carbon P-type 4.7K ohm ±10% 1/4W | 2 |
| R135,136 | Carbon P-type 10K ohm ±10% 1/4W | 2 |
| R151,152 | Carbon P-type 12K ohm ±10% 1/4W | 2 |
| R113,114,157,158 | Carbon P-type 15K ohm ±10% 1/4W | 4 |
| R117,118 | Carbon P-type 27K ohm ±10% 1/4W | 2 |
| R129,130 | Carbon P-type 3.3K ohm ±10% 1/4W | 2 |
| R109,110 | Carbon P-type 39K ohm ±10% 1/4W | 2 |
| R101,102 | Carbon P-type 56K ohm ±10% 1/4W | 2 |
| R143,144 | Carbon P-type 68K ohm ±10% 1/4W | 2 |
| R121,122,147,148 | Carbon P-type 100K ohm ±10% 1/4W | 4 |
| R105,106 | Carbon P-type 120K ohm ±10% 1/4W | 2 |
| R149,150 | Carbon P-type 150K ohm ±10% 1/4W | 2 |
| R111,112 | Carbon P-type 270K ohm ±10% 1/4W | 2 |
| R125,126 | Carbon P-type 330K ohm ±10% 1/4W | 2 |
| R119,120 | Carbon P-type 390K ohm ±10% 1/4W | 2 |
| R159 | Carbon P-type 560 ohm ±10% 1/4W | 1 |
| | **CAPACITORS** | |
| C109,110 | Mylar 0.003$\mu$F ±20% 50WV | 2 |
| C125,126 | Mylar 0.0047$\mu$F ±20% 50WV | 2 |
| C111,112 | Mylar 0.01$\mu$F ±20% 50WV | 2 |
| C129,130 | Mylar 0.033$\mu$F ±20% 50WV | 2 |
| C127,128 | Mylar 0.047$\mu$F ±20% 50WV | 2 |
| C131,132 | Mylar 0.22$\mu$F ±20% 50WV | 2 |
| C121,122 | Alsicon. 1$\mu$F ±20% 10WV | 2 |
| C115,116 | Electrolytic 10$\mu$F −10% ~ +150% 25WV | 2 |
| C113,114,143,144 | Electrolytic 33$\mu$F −10% ~ +150% 10WV | 4 |
| C137,138 | Electrolytic 47$\mu$F −10% ~ +150% 25WV | 2 |
| C147 | Electrolytic 1000$\mu$F −10% ~ +150% 35WV | 1 |

## SCHEMATIC DIAGRAM




| | | | | | | | |
|---|---|---|---|---|---|---|---|
| TR1 ~ TR10 | 2SC693 | D1 ~ D18 | DS-410 | S1-a ~ S1-d | SELECTOR SW | S3 | MODE SW |
| TR11 ~ TR14 | 2SA608 | D19. D20 | 10D1 | 1. | PHONO 1 | | 1 MONO |
| TR15. TR16 | 2SC875 | D21 | 10DC1 | 2. | PHONO 2 | | 2. STEREO |
| TR17. TR18 | 2SC876 | D22 | 10DC1R | 3. | TUNER | S4 | LOUDNESS |
| TR19. TR20 | 2SA532 | | | 4. | AUX 1 | | 1. IN |
| TR21 TR22 | 2SA616 | VR1 | 50KA×2 TREBLE | 5. | AUX 2 | | 2. OUT |
| TR23 TR24 | 2SD155 | VR2 | 50KA×2 BASS | S2 | TAPE MONITOR | S5 | HIGH FILTE |
| | | VR3 | 50KHB×2 BALANCE | 1. | PLAY | | 1. IN |
| | | VR4 | 50KB×2 VOLUME | 2. | SOURCE | | 2 OUT |




S6 POWER SW
1 ON
2 OFF
S7 SP SELECTOR
1 SYSTEM A
2 SYSTEM B

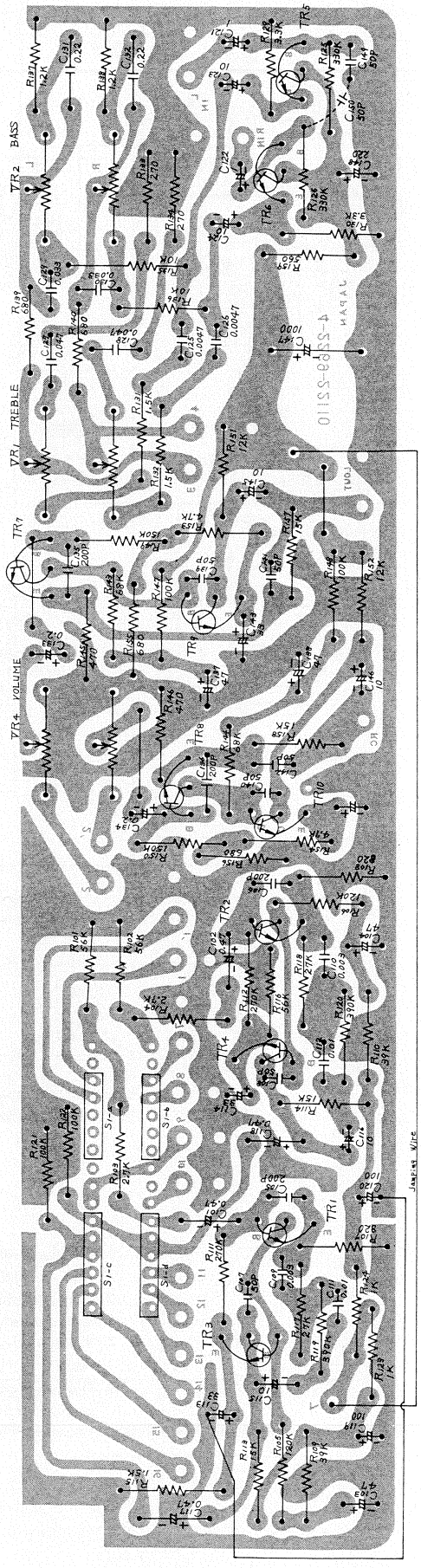
**NOTES:**

1. Function switch
   AUX 2 continue to AUX 1, TUNER, PHONO 2 and PHONO 1.
2. Every resistor values in ohm.
3. Unless otherwise specified, all capacitor values in microfarads.
4. Voltage measured with "VTVM" with respect to chassis ground.
   No signal, 120 volt ac line, voltage may vary by 10%.
5. This is a standard schematic diagram, some sets may be modified slightly for better performance.

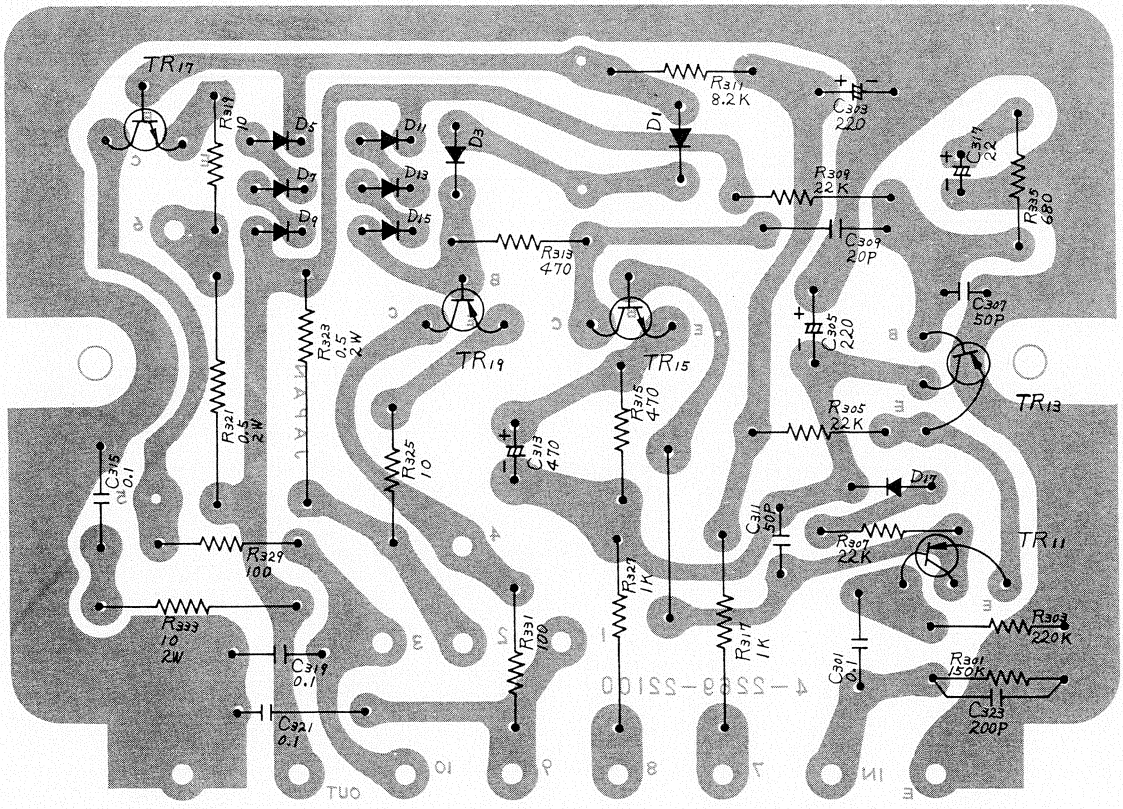
## PARTS LIST

| Ref. No. or Part No. | Description | Q'ty |
|---|---|---|
| PRE AMP. P.C.B. ASSEMBLY | | |
| C107,108,139,140, 141,142,149,150 | Ceramic 50PF ±10% 10WV | 8 |
| C135,136,105,106 | Ceramic 200PF ±20% 10WV | 4 |
| C133,134 | Alsicon 0.2μF ±20% 10WV | 2 |
| C103,104 | Electrolytic 47μF −10% ~ +150% 25WV | 2 |
| C148 | Electrolytic 220μF −10% ~ +150% 25WV | 1 |
| C101,102 | Alsicon 0.47μF ±20% 10WV | 2 |
| C117,118 | Alsicon 0.47μF ±20% 25WV | 2 |
| C119,120 | Electrolytic 100μF −10% ~ +150% 25WV | 2 |
| C123,124,145,146 | Electrolytic 10μF −10% ~ +150% 50WV | 4 |
| MAIN AMP. P.C.B. ASSEMBLY | | |
| 131 0 4001 21000 | Printed circuit assembly | 2 |
| 131 2 6201 17000 | Heat sink | 2 |
| TR11,13,12,14 | Transistor 2SA608 | 4 |
| TR15,16 | Transistor 2SC875 | 2 |
| TR17,18 | Transistor 2SC876 | 2 |
| TR19,20 | Transistor 2SA532 | 2 |
| TR23,24 | Transistor 2SD155 | 2 |
| TR21,22 | Transistor 2SA616 | 2 |
| D1,2,3,4,5,6,7,8,9, 10,11,12,13,14,15, 16,17,18 | Diode DS-410 | 18 |
| | **RESISTORS** | |
| R319,325,320,326 | Carbon P-type 10Ω ±10% 1/4W | 4 |
| R329,331,330,332 | Carbon P-type 100Ω ±10% 1/4W | 4 |
| R313,315,314,316 | Carbon P-type 470Ω ±10% 1/4W | 4 |
| R335,336 | Carbon P-type 680Ω ±10% 1/4W | 2 |
| R311,312 | Carbon P-type 8.2KΩ ±10% 1/4W | 2 |
| R305,307,309,306, 308,310 | Carbon P-type 22KΩ ±10% 1/4W | 6 |
| R301,302 | Carbon P-type 150KΩ ±10% 1/4W | 2 |
| R303,304 | Carbon P-type 220KΩ ±10% 1/4W | 2 |
| R321,323,322,324 | Cement 0.5Ω ±10% 2W | 4 |
| R333,334 | Carbon P-type 10Ω ±10% 1/2W | 2 |
| R317,327,318,328 | Carbon P-type 1KΩ ±10% 1/2W | 4 |
| | **CAPACITORS** | |
| C301,315,302,316 319,321,320,322 | Mylar 0.1μF ±20% 50WV | 8 |
| C309,310 | Ceramic 20pF ±20% 50WV | 2 |
| C307,311,308,312 | Ceramic 50pF ±20% 50WV | 4 |
| C323,324 | Ceramic 200pF ±20% 50WV | 2 |
| C317,318 | Electrolytic 22μF −10% ~ +150% 10WV | 2 |
| C313,314 | Electrolytic 470μF −10% ~ +150% 6.3WV | 2 |
| C303,305,304,306 | Electrolytic 220μF −10% ~ +150% 35WV | 4 |

## PRE AMP P. C. B. ASSEMBLY



## MAIN AMP P. C. B. ASSEMBLY

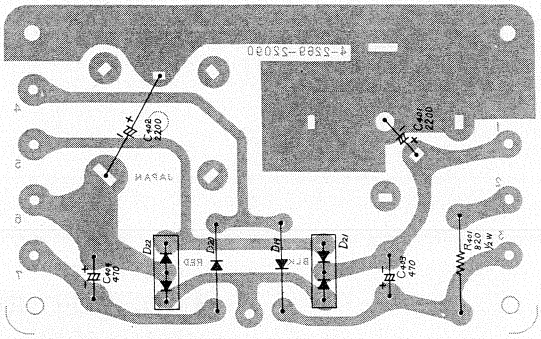



## PARTS LIST

| Ref. No. or Part No. | Description | Q'ty |
|---|---|---|
| POWER SUPPLY P.C.B. ASSEMBLY | | |
| 131 0 4001 21200 | Printed circuit assembly | 1 |
| 4 2239 20460 | Electrolytic Capacitor 220μF 35WV | 2 |
| D19,20 | Diode 10D1 | 2 |
| D21 | Diode 10DC1 | 1 |
| D22 | Diode 10DC1R | 1 |
| | **CAPACITORS** | |
| C403,404 | Electrolytic 470μF −10% ~ +150% 25WV | 2 |
| | **RESISTORS** | |
| R401 | Carbon P-type 820 ohm ±10%1/2W | 1 |

| Ref. No. or Part No. | Description | | Q'ty |
|---|---|---|---|
| SWITCH P.C.B. ASSEMBLY | | | |
| 131 0 4001 21300 | Printed circuit assembly | | 1 |
| 4 2319 22170 | Switch, Lever | | 3 |
| | **RESISTORS** | | |
| R203,204 | Carbon P-type 2.2K ohm | ±10%1/4W | 2 |
| R207,208 | Carbon P-type 2.7K ohm | ±10%1/4W | 2 |
| R201,202 | Carbon P-type 470K ohm | ±10%1/4W | 2 |
| R205,206 | Carbon P-type 820K ohm | ±10%1/4W | 2 |
| | **CAPACITORS** | | |
| C203,204 | Mylar 0.001μF | ±20% 10WV | 2 |
| C201,202 | Mylar 0.01μF | ±20% 10WV | 2 |
| C205,206 | Mylar 0.1μF | ±20% 10WV | 2 |

## POWER SUPPLY P. C. B. ASSEMBLY



## SWITCH P. C. B. ASSEMBLY